REMARKS

This Application has been carefully reviewed in light of the Office Action mailed February 19, 2009 ("*Office Action*"). Claims 24-46 are pending and rejected in this office action. Applicants amend Claims 24 and 30. Applicants respectfully request reconsideration and allowance of all pending claims.

Section 112 Rejections

The Office Action rejects Claims 30-34 and 41-46 under 35 U.S.C. § 112, first paragraph, as allegedly failing to comply with the written description requirement.

In rejecting Claim 31 under 35 U.S.C. § 112, first paragraph, the Office Action states there is insufficient antecedent basis for the limitation of "the second NxM surface condition." Applicants have amended this claim to correct a clerical error, thereby rendering moot the rejection. In particular, Claim 31, as amended, recites "the NxM surface condition." Applicants respectfully request reconsideration and allowance of Claim 31.

In rejecting Claims 30-34 and 41-46 under 35 U.S.C. § 112, first paragraph, the Office Action states that "the specification as originally filed discloses only where P is greater than zero . . . [and that] while P can be greater than one it can also be no more than one since one is within the range of values for P that is taught." *Office Action* at 2. Applicants respectfully traverse this rejection for at least the reasons below.

Claims 30-34 and 41-46 satisfy the requirements of 35 U.S.C. § 112, first paragraph, at least because the Specification discloses various example embodiments where "P is an integer greater than one." For example, FIGURE 2A and the accompanying description of Applicant's Specification as originally filed illustrate and describe a surface 24 having a 2 x 1 surface condition. Furthermore, page 8 of Applicant's Specification as originally filed states, "[a]lthough FIGURE 2A shows surface 24 defined by only two section curves 26A and 26B and one guide curve 28, a different number of section curves and a different number of guide curves intersecting at different portions of the respective curves may define surface 24."

In addition, the Office Action states that Applicant's Specification discloses, "P can be greater than one" and that "one is within *the range of values* for P that is taught." *Office Action* at 2 (emphasis added). The Office Action concedes, therefore, that Applicant's Specification as originally filed discloses that P may be one or some other integer value greater than zero that is "within the *range of values* for P that is taught." *Id.* All integer values greater than zero and not equal to one must also be greater than one. The Office Action thus concedes that Applicant's Specification as originally filed discloses, "wherein P is an integer greater than one," as recited in Claims 30-34 and 41-16.

For at least the above reasons, Claims 30-34 and 41-46 are allowable and Applicants respectfully request that the rejection of Claims 30-34 and 41-46 these claims under Section 112, first paragraph be withdrawn.

Section 101 Rejections

The Examiner rejects Claims 24-34 under 35 U.S.C. § 101 as allegedly directed to non-statutory subject matter. Without conceding the veracity of these rejections and solely to advance prosecution of this case, Applicants amend independent Claims 24 and 30 to render these rejections moot. In particular, independent Claims 24 and 30, as amended, each recite "*using a computing system*, determining that a first surface of a drawing comprises a first plurality of curves constituting a P x 1 surface condition." Applicants respectfully request that the rejections of Claims 24-34 under 35 U.S.C. § 101 rejections be withdrawn.

Section 103 Rejections

The Examiner rejects Claims 24-46 under 35 U.S.C. § 103(a) over Maya Unlimited 2.0, User's Guide © 1998-1999 ("*Maya*") in view of U.S. Patent No. 5,619,625 issued to Konno et al. ("*Konno*").

   A.   **The cited references fail to disclose "determining that a first surface of a
        drawing comprises a first plurality of curves constituting a P x 1 surface
        condition" in addition to "determining that a second surface of a drawing
        comprises a second plurality of curves constituting a first N x M surface
        condition"**

Claim 24 is allowable at least because the cited references fail to disclose, teach, or suggest, "using a computer system, determining that a first surface of a drawing comprises a first plurality of curves constituting a P x 1 surface condition" in addition to "determining that a second surface of a drawing comprises a second plurality of curves constituting a first N x M surface condition."[1] The burden is on the Examiner to explain how the cited references could possibly be used in combination to establish the claimed *determining* steps of the first and second *surfaces of a drawing*, which the Examiner has failed to do.

The Office Action states that *Maya* discloses on pages 21-22 the determining steps of the first and second surfaces of a drawing, but this is not correct. *Office Action* at 7. In particular, the Office Action states "Choosing the extrude style" to apply to two connected curves discloses the claimed determining steps of the first and second surfaces of a drawing. Notably, the Office Action fails to indicate any portion of either reference expressly disclosing the claimed "determining" steps as applied to first and second surfaces of a drawing and instead the Office Action on page 7 relies on the act of "choosing" an extrusion style that is applied to two curves *to create a drawing*. Because the surface that is drawn by the chosen extrusion style in *Maya* is not defined and in fact is not even drawn until sometime after the extrusion style is chosen and applied, the choosing act itself fails to disclose "*determining that a first surface of a drawing comprises a first plurality of curves constituting a P x 1 surface condition*" and "*determining that a second surface of a drawing comprises a second plurality of curves constituting a first N x M surface condition.*"

The Office Action states that *Maya* also discloses on page 34 the determining steps of the first and second surfaces of a drawing, but this is not correct at least for analogous reasons. *Office Action* at 7. In particular, the Office Action states "Adding curves to Lofted surfaces" discloses the claimed determining steps of the first and second surfaces of a drawing. The act of adding new surfaces to a drawing, however, fails to disclose

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[1] "A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 2 U.S.P.Q.2d 1051, 1053 (Fed. Cir. 1987); MPEP § 2131. In addition, "[t]he identical invention <u>must</u> be shown in as complete detail as is contained in the . . . claims" and "[t]he elements <u>must</u> be arranged as required by the claim." *Richardson v. Suzuki Motor Co.*, 9 U.S.P.Q.2d 1913, 1920 (Fed. Cir. 1989); *In re Bond*, 15 U.S.P.Q.2d 1566 (Fed. Cir. 1990); MPEP § 2131 (*emphasis added*).

"*determining that a first surface of a drawing* comprises a first plurality of curves constituting a P x 1 surface condition" and "*determining that a second surface of a drawing* comprises a second plurality of curves constituting a first N x M surface condition." Indeed, the Office Action fails to indicate any portion of *Maya* that allegedly discloses the claimed determining steps with reference to either the lofted surface or the added curve surfaces once they are drawn. It could not because there is none.

The Office Action states that *Maya* also discloses on page 43 the claimed determining steps of the first and second surfaces of a drawing. *Office Action* at 7. Applicants respectfully disagree. In particular, the Office Action states, "once an NxM surface has been generated via extrusion, lofting or the Birail Tools, it is understood that additional curves may be added/selected such that a first surface having a Px1 surface condition is determined." However, merely adding new curves to a drawing fails to disclose "*determining that a first surface of a drawing* comprises a first plurality of curves constituting a P x 1 surface condition" and "*determining that a second surface of a drawing* comprises a second plurality of curves constituting a first N x M surface condition," as explained above. In addition, *Maya* discloses on page 43 that curves are selected prior to the drawing of a surface including such curves. The selecting act thus fails to disclose "*determining that a first surface of a drawing* comprises a first plurality of curves constituting a P x 1 surface condition" and "*determining that a second surface of a drawing* comprises a second plurality of curves constituting a first N x M surface condition" at least because the surface is not even drawn until sometime after the selection is made.

For at least the above reasons, Claim 24 is allowable, as are all claims depending therefrom. Independent Claims 30, 35, and 41 are allowable at least for analogous reasons, as are all claimed depending respectively therefrom. Applicants therefore respectfully request the rejection of Claims 24-41 under 35 U.S.C. 103(a) be withdrawn and the claims allowed.

     B.   **The cited references fail to disclose "converting the P x 1 surface
condition of the first surface into a second N x M surface condition to
match the N x M surface condition of the second surface"**

Claim 24 is allowable also at least because the cited references fail to disclose, teach,
or suggest, "converting the P x 1 surface condition of the first surface into a second N x M
surface condition to match the N x M surface condition of the second surface." The Office
Action asserts that the lofted surface on page 34 of *Maya* discloses the second surface having
an N x M surface condition and that the added curve extension of *Maya* discloses the first
surface having a P x 1 surface condition that is converted. *Office Action* at 7. Applicants
respectfully disagree. As a preliminary matter, these elements of *Maya* fail to disclose the
determined first and second surfaces of a drawing recited in Claim 24 at least for the reasons
above. Furthermore, *Maya* merely discloses generating the surface of the new curve
extension, which fails to disclose converting anything that can be considered a P x 1 surface
condition of the curve extension once it is generated, much less converting a P x 1 surface
condition of the curve extension to match an N x M surface condition of the lofted surface.

Indeed, the fact that the Office Action incorrectly equates the act of ***generating a new
surface*** with the act of ***converting a P x 1 surface condition of a surface of a drawing*** is
made clear by the Office Action statement that "Maya Unlimited 2.0 does not specifically
teach wherein the second NxM surface is ***generated*** to match the first NxM surface as
claimed" but that *Kono* discloses a generating step. *Office Action* at 8 (emphasis added).
However, Claim 24 does not recite ***generating a surface*** to match the first NxM surface, as
the Office Action incorrectly suggests, but rather Claim 24 recites "***converting the P x 1
surface condition of the first surface*** . . . to match the N x M surface condition of the second
surface." The Office Action thus fails to even expressly assert the proposed *Maya-Kono*
combination discloses each claim element as arranged in Claim 24 and instead the Office
Action incorrectly substitutes its own claim language in its rejection arguments, which is
contrary to the M.P.E.P. and established case law.[2]

The Office Action on pages 8-9 states that it relies on *Kono* to cure the deficiencies of
Maya with regard to "converting the P x 1 surface condition of the first surface into a second

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[2] *See, e.g.,* note 1 *infra.*

N x M surface condition to match the N x M surface condition of the second surface," as recited in Claim 24. Applicants respectfully disagree. In particular, the Office Action asserts that *Kono* "indicat[es] that a second NxM surface generated adjacent to a first NxM surface would match the first NxM surface in order to ensure continuity between the adjacent surfaces." Notably, the Office Action fails to even assert the proposed *Maya-Kono* combination discloses "converting the P x 1 surface condition of the first surface into a second N x M surface condition to match the N x M surface condition of the second surface" and instead the Office Action states that *Kono* discloses generating, but not converting, one N x M surface next to another N x M surface such that the two surfaces are matched. However, if the two N x M surfaces are already matched, as the Office Action suggests, then one N x M surface cannot be **converted** to match the other N x M surface. Thus, the Office Action characterizations of *Kono* and *Maya* teach away from their combination at least because it is not possible to convert one surface to match another if the two surfaces are already matched. In addition, the Office Action characterization of *Kono* fails to cure the deficiencies of *Maya* at least because the Office Action states that the two adjacent surfaces in *Kono* are both *N x M surfaces*, which fails to disclose "converting *the P x 1 surface condition of the first surface* into a second N x M surface condition to match the N x M surface condition of the second surface." Thus, *Maya* fails to cure the deficiencies of *Konno* and vice versa.

For at least these additional reasons, Claim 24 is allowable, as are all claims depending therefrom. Independent Claims 30, 35, and 41 are allowable at least for analogous reasons, as are all claimed depending respectfully therefrom. Applicants therefore respectfully request the rejection of Claims 24-41 under 35 U.S.C. 103(a) be withdrawn and the claims allowed.

C.   The Office Action fails to establish a prima facie case of obviousness for the limitations specific to independent Claim 30

Claim 30 is allowable also at least because the cited references fail to disclose, teach, or suggest:

in response to determining that the plurality of curves constitute a P x 1 surface condition, converting the P x 1 surface condition into an N x M surface condition by generating at least one auxiliary curve that is substantially continuous with any adjoining surfaces of the first surface and

compatible with the number of first curves and the only one second curve that define the P x 1 surface condition.

The Office Action asserts on pages 13-14 that *Maya* discloses "***converting the P x 1 surface condition into an N x M surface condition***," which is incorrect at least for reasons analogous to those stated above. The Office Action concedes that *Maya* fails to disclose performing the claimed converting step by "***generating at least one auxiliary curve*** that is substantially continuous with any adjoining surfaces of the first surface and compatible with the number of first curves and the only one second curve that define the P x 1 surface condition." *Office Action* at 14. The Office Action relies on *Konno* to cure the deficiency of *Maya*, but this is not correct at least because the Office Action fails to clearly indicate which surface of what drawing in *Kono* allegedly comprises "a first plurality of curves constituting a P x 1 surface condition." Thus, it is unclear what curve in *Kono* the Office Action considers as meeting the limitation of "generating at least one auxiliary curve that is substantially continuous with any adjoining surfaces of the first surface and compatible with the number of first curves ***and the only one second curve that define the P x 1 surface condition***."

In addition, the Office Action fails to meet the burden of establishing that the cited references show, either individually or in combination, "***converting*** the P x 1 surface condition . . . ***by generating*** at least one auxiliary curve" and instead the Office Action merely asserts, incorrectly, that *Maya* discloses the converting element and that *Kono* discloses the generating element. As explained by the Federal Circuit, "[i]t is immaterial to the issue, however, that all of the elements were old in other contexts" and that instead "[w]hat must be found obvious to defeat the patent ***is the claimed combination***." *Kimberly-Clark Corp. v. Johnson & Johnson*, 745 F.2d 1437, 1448, 223 USPQ 603, 609-10 (Fed. Cir. 1984) (emphasis added).

The failure of the Office Action to establish a prima facie case of obviousness regarding the limitation of "***converting*** the P x 1 surface condition . . . ***by generating*** at least one auxiliary curve" is also made clear by the lack of any support to establish one of ordinary skill in the art would have recognized that the results of the proposed combination were predictable, as is required by M.P.E.P. § 2143.A, or that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each

element merely performs the same function as it does separately, which is also required by M.P.E.P. § 2143.A. Instead, the Office Action on page 15 merely states the proposed *Maya-Kono* combination relies on the same rationale for Claim 30 as it does for 24, which is incorrect at least because Claim 24 does not even include the above limitation of Claim 30.

In addition, the Office Action fails to establish the proposed *Maya-Kono* combination shows that at least one auxiliary curve is generated "in response to determining that the plurality of curves constitute a P x 1 surface condition." The Office Action concedes *Maya* does not disclose the above limitations. *Kono* fails to cure the deficiency of *Maya* at least because *Kono* fails to disclose generating at least one auxiliary curve "in response to determining that the plurality of curves constitute a P x 1 surface condition." Indeed, the Office Action does not even allege that *Kono* makes such a disclosure.

For at least these additional reasons, Independent Claims 30 is allowable, as are all claims depending respectively therefrom. Favorable action is requested.

D.   The proposed *Maya-Konno* combination is improper

Furthermore, Applicants respectfully submit that the Examiner has not provided the requisite teaching, suggestion, or motivation, either in the cited references or in the knowledge generally available to one of ordinary skill in the art at the time of Applicants' invention to modify or combine *Maya* with the disclosure of *Konno* in the manner the Examiner proposes. Applicants' claims are allowable for at least this additional reason.

1.   The Legal Standard

The question raised under 35 U.S.C. § 103 is whether the prior art taken as a whole would suggest the claimed invention taken as a whole to one of ordinary skill in the art at the time of the invention. Accordingly, even if all elements of a claim are disclosed in various prior art references, which is certainly not the case here as discussed above, the claimed invention taken as a whole cannot be said to be obvious without some reason given in the prior art why one of ordinary skill at the time of the invention would have been prompted to modify the teachings of a reference or combine the teachings of multiple references to arrive at the claimed invention. Applicants respectfully submit that the Examiner has merely pieced

together disjointed portions of references, with the benefit of hindsight using Applicants' claims as a blueprint, in an attempt to reconstruct Applicants' claims.

The governing Federal Circuit case law makes this strict legal standard clear.[3] According to the Federal Circuit, "a showing of a suggestion, teaching, or motivation to combine or modify prior art references is an essential component of an obviousness holding." *In re Sang-Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430, 1433 (Fed. Cir. 2002) (quoting *Brown & Williamson Tobacco Corp. v. Philip Morris Inc.*, 229 F.3d 1120, 1124-25, 56 U.S.P.Q.2d 1456, 1459 (Fed. Cir. 2000)). "Evidence of a suggestion, teaching, or motivation . . . may flow from the prior art references themselves, the knowledge of one of ordinary skill in the art, or, in some cases, the nature of the problem to be solved." *In re Dembiczak*, 175 F.3d 994, 999, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). However, the "range of sources available . . . does not diminish the requirement for actual evidence." *Id.* *Although a prior art device "may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.*" *In re Mills*, 916 F.2d at 682, 16 U.S.P.Q.2d at 1432 (emphasis added). *See also In re Rouffet*, 149 F.3d 1350, 1357, 47 U.S.P.Q.2d 1453, 1457-58 (Fed. Cir. 1998) (*holding a prima facie case of obviousness not made where the combination of the references taught every element of the claimed invention but did not provide a motivation to combine*); *In Re Jones*, 958 F.2d 347, 351, 21 U.S.P.Q.2d 1941, 1944 (Fed. Cir. 1992) ("Conspicuously missing from this record is any evidence, other than the PTO's speculation (if that can be called evidence) that one of ordinary skill in the herbicidal art would have been motivated to make the modification of the prior art salts necessary to arrive at" the claimed invention.). Even a determination that it would have been obvious to one of ordinary skill in the art at the time of the invention to try the proposed modification or combination is not sufficient to establish a *prima facie* case of obviousness. *See In re Fine*, 837 F.2d 1071, 1075, 5 U.S.P.Q.2d 1596, 1599 (Fed. Cir. 1988).

In addition, the M.P.E.P. and the Federal Circuit repeatedly warn against using an applicants' disclosure as a blueprint to reconstruct the claimed invention. For example, the M.P.E.P. states, "*The tendency to resort to 'hindsight' based upon applicants' disclosure is*

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[3] Note M.P.E.P. 2145 X.C. ("The Federal Circuit has produced a number of decisions overturning obviousness rejections due to a lack of suggestion in the prior art of the desirability of combining references.").

often difficult to avoid due to the very nature of the examination process. However, impermissible hindsight must be avoided and the legal conclusion must be reached on the basis of the facts gleaned from the prior art." M.P.E.P. § 2142 (emphasis added). The governing Federal Circuit cases are equally clear. "A critical step in analyzing the patentability of claims pursuant to [35 U.S.C. § 103] is casting the mind back to the time of invention, to consider the thinking of one of ordinary skill in the art, guided only by the prior art references and the then-accepted wisdom in the field. . . . Close adherence to this methodology is especially important in cases where the very ease with which the invention can be understood may prompt one 'to fall victim to the insidious effect of a hindsight syndrome *wherein that which only the invention taught is used against its teacher.*'" *In re Kotzab*, 217 F.3d 1365, 1369, 55 U.S.P.Q.2d 1313, 1316 (Fed. Cir. 2000) (citations omitted; emphasis added). In *In re Kotzab*, the court noted that to prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to show a motivation to combine the references that create the case of obviousness. *See id. See also, e.g., Grain Processing Corp. v. American Maize-Products*, 840 F.2d 902, 907, 5 U.S.P.Q.2d 1788, 1792 (Fed. Cir. 1988). Similarly, in *In re Dembiczak*, the Federal Circuit reversed a finding of obviousness by the Board, *explaining that the required evidence of such a teaching, suggestion, or motivation is essential to avoid impermissible hindsight reconstruction of an applicants' invention*:

> Our case law makes clear that the best defense against the subtle but powerful attraction of hind-sight obviousness analysis is *rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references*. Combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability—the essence of hindsight.

175 F.3d at 999, 50 U.S.P.Q.2d at 1617 (emphasis added) (citations omitted; emphasis added).

2. The Analysis

With regard to independent Claims 24, 30, 35, and 41, the Examiner states the that "it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method of Maya Unlimited 2.0 to include the teachings of Konno et al.

thereby providing a free-form surface generation method . . ." *Office Action* at 8-9. As motivation for doing so, the Examiner refers to several advantages purported to be provided by the free-form surface generation method of *Konno*. *Id.*; see also page 22. Thus, it appears that the Examiner has merely proposed alleged advantages for combining *Maya* with *Konno* (advantages that Applicants do not admit could even be achieved by combining these references in the manner the Examiner proposes). The Examiner has not pointed to any portions of the cited references, however, that would teach, suggest, or motivate one of ordinary skill in the art at the time of invention to incorporate the calculation of cross boundary derivatives on all the boundary curves forming a face as disclosed in *Konno* with the methods of generating surfaces disclosed in *Maya*.

In other words, the alleged advantages of the systems, as provided by the Examiner, do not provide an explanation as to: (1) why it would have been obvious to one of ordinary skill in the art at the time of Applicants' invention (***without using Applicants' claims as a guide***) to modify the particular techniques disclosed in *Maya* with the cited disclosure in *Konno*; (2) how one of ordinary skill in the art at the time of Applicants' invention would have actually done so; and (3) how doing so would purportedly meet the limitations of Applicants' claims in a successful manner. Indeed, if it were sufficient for Examiners to merely point to a purported advantage of one reference and conclude that it would have been obvious to combine of modify that reference with other references simply based on that advantage (which, as should be evident from the case law discussed above, it certainly is not), then virtually any two or more references would be combinable just based on the fact the one reference states an advantage of its system. Of course, as the Federal Circuit has made clear and as discussed above, that is not the law.

Accordingly, Applicants respectfully submit that the Examiner's conclusions set forth in the Office Action do not meet the requirements set forth in the M.P.E.P. and the governing Federal Circuit case law for demonstrating a *prima facie* case of obviousness. The Examiner's attempt to modify or combine *Maya* with *Konno* appears to constitute the type of impermissible hindsight reconstruction of Applicants' claims, using Applicants' claims as a blueprint, that is specifically prohibited by the M.P.E.P. and governing Federal Circuit cases.

Furthermore, the rejection of Claims 24-41 based on the proposed *Maya-Kono* combination is improper at least because these references, either alone or in combination, fail to teach each limitation of the pending claims for at least the reasons stated above. Indeed, the Office Action characterizations of *Kono* and *Maya* not only fail to teach each limitation of the pending claims, the Office Action characterizations actually teach away from their combination for at least the reasons stated above.

For at least these reasons, Applicants respectfully request that the rejections of Claims 24-41 based on the proposed *Maya-Konno* combination be withdrawn and the claims allowed.

III.   No Waiver

All of Applicants' arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the references cited by the Examiner. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements. The example distinctions discussed by Applicants are sufficient to overcome the Examiner's rejections.

CONCLUSION

Applicants have made an earnest attempt to place this case in condition for immediate allowance. For the foregoing reasons and for other reasons clear and apparent, Applicants respectfully request reconsideration and allowance of the pending claims.

If there are matters that can be discussed by telephone to advance prosecution of this application, Applicants invite the Examiner to contact its attorney at (214) 953-6809.

Although Applicants believe no fees are due, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 19-2179.

Respectfully submitted,

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